

CLAIMS

- [001] 1. A linear drive device comprising at least one excitation winding for producing a variable magnetic field and provided with at least one associated magnetic-flux-carrying yoke body as well as an armature body which comprises a magnet carrier provided with at least two permanent magnet parts and to which an axial oscillation movement can be transferred by the magnetic field of the excitation winding, characterised in that the magnet carrier (12) is constructed, at least in parts, of an electrically insulating material which dips into the magnetic field area defined by the pole surfaces (S) of the yoke body (5a, 5b) and the excitation winding (4a, 4b) or comes to rest therein.
- [002] 2. The device according to claim 1, characterised in that the magnet carrier (12) consists entirely of an insulating material.
- [003] 3. The device according to claim 1, characterised in that the magnet carrier (12) consists of metal, wherein the parts (14a, 14b) of the magnet carrier (12) which dip into the magnetic field area of the yoke body (5a, 5b) and/or the excitation winding (4a, 4b) are constructed of an insulating material.
- [004] 4. The device according to any one of the preceding claims, characterised in that each magnet part (9a, 9b) with respect to the associated yoke body (5a, 5b) and/or the excitation winding (4a, 4b) is covered by a magnetic cover (16a, 16b or 17a, 17b) made of a ferromagnetic sheet or a corresponding layer, wherein the magnetic covers are spaced axially apart by means of a spacing joint (19).
- [005] 5. The device according to claim 4, characterised in that the ferromagnetic magnet covers (16a, 16b or 17a, 17b) can advantageously be spaced apart from one another by a distance  $a > 2s$ , where  $s$  is the distance of the magnet covers from the respective pole surface ( $F_p$ ) of the associated yoke body (5a, 5b).

- [006] 6. The device according to claim 4 or claim 5, characterised in that each ferromagnetic magnet cover (16a, 16b, 17a, 17b) advantageously covers a larger area than the respectively associated magnet part (9a or 9b).
- [007] 7. The device according to any one of claims 4 to 6, characterised in that the ferromagnetic magnet covers (16a, 16b) consist of an Fe-Si alloy.
- [008] 8. The device according to any one of claims 4 to 7, characterised in that the ferromagnetic covers each have a thickness (d) between 0.2 mm and 1.5 mm, preferably between 0.35 and 1 mm.
- [009] 9. The device according to any one of the preceding claims, characterised in that the magnet parts (9a, 9b) are embodied as plate- or sheet-shaped.
- [010] 10. The device according to any one of the preceding claims, characterised by a symmetrical construction with respect to a plane of symmetry (SE).
- [011] 11. The device according to any one of the preceding claims, characterised in that the armature body (8) is rigidly connected to a pump plunger (11) of a compressor (V).